

CANADIAN DAIRY COMMISSION

COST OF PRODUCTION

DRAFT RESULT BASED ON 2016 SURVEY DATA

INDEXED TO 3RD QUARTER OF 2017

November 2017

Policy and Economics

2016 COP Highlights

Results

- The cost of production for one standard hectolitre of milk in 2016 was \$76.55, a decrease of -1.9% compared to the 2015 cost of production (COP). The table below shows that the \$1.45/hL decrease in the total COP in 2016 is mainly attributable to decreases in labour costs of \$1.04/hL, although capital costs show significant decreases (\$0.60/hL), as well.

	2016 COP	2015 COP	% change
Cash Costs	42.90	42.61	0.7%
Capital Costs	14.45	15.05	-4.0%
Labour Costs	19.34	20.38	-5.1%
Total COP	76.55	78.00	-1.9%

Highlights

- Most of the cash cost components decreased from last year's costs, with the most significant decreases seen in the purchase and sale of animals, seed and plant costs, and fuel and lubricants.
- Purchased feed and artificial insemination were the most significant cash cost components showing an increase in comparison with the previous year.
- Capital costs decreased, with interest paid and return on equity being the main drivers of this decrease.
- Overall producer labour costs decreased significantly compared to the previous year.
- An average increase in production per farm across Canada is the main reason for the decrease in capital and labour costs.

Indexation

- Indexed to the 3rd quarter of 2017, the estimated COP is \$75.71 per hectolitre. This represents a decrease of -2.2% over the 2015 COP indexed to 3rd quarter of 2016.
- Statistics Canada indices have contributed to a lower COP after indexation. Purchased feed costs, a large element of cash costs, were indexed downward, as well as hydro, phone, and transportation costs.

Methodology

Sample

- The sample is selected to be representative of the dairy farm population at the Canadian level only.
- Producers in the sample are randomly selected. For the year 2016, a total of 228 farms were sampled.

Calculation and efficiency measures

- Reported costs cover the milking herd plus replacement animals.
- Any farm with a COP that is outside of two standard deviations is considered an outlier, and is therefore excluded from the final sample. For the year 2016, 5 farms were excluded. The data and information collected from the remaining 223 farms were used to calculate the national COP.
- A COP for each region was calculated by weighting the cost of each producer against their share of regional production in the sample. This regional production cost was adjusted by a strata correction factor. The national COP was then calculated by weighting each regional COP against regional shares of total P9 production.

Indexation

The following components are used to index the 2016 COP to the 3rd quarter of 2017:

- a) Cash costs are indexed to the 3rd quarter of 2017 using Statistics Canada indices (see Appendix 1);
- b) The interest component is indexed using the Bank of Canada five-year mortgage rate (see Appendix 1);
- c) Producer labour and remaining components of the capital costs are not indexed.

Standardization

- The cost of production data is provided to the CDC based on actual figures. Individual farm data are not available in standard hectolitres. Standardization is only performed at the end of the process using the most recent component standards.
- The following standards were used in the 2016 COP calculations:

	Butterfat	SNF
Allocation of costs ⁽¹⁾	38%	62%
Milk standard composition	3.6 kg/hl	8.9177 kg/hl
Sample milk composition ⁽²⁾	4.071 kg/hl	9.093 kg/hl

⁽¹⁾ The allocation between butterfat and SNF is determined by the share of the estimated producer returns at P10 target prices.

⁽²⁾ Weighted average composition of all eligible farms.

- It is important to note that the CDC support price is no longer used to determine the allocation of revenue between BF and SNF. Due to the decoupling of support prices from producer target revenue on February 1, 2017, the P10 target price is used to determine a more accurate reflection of the share of revenue between components.

National Cost of Production Calculation

2016 Results

	2016 COP	2016 COP Indexed to 2017 Q3	2015 COP Indexed to Q3 2016	% change 2017 Q3/Q3 2016
	\$/hl	\$/hl	\$/hl ⁽²⁾	
CASH COSTS				
Purchased feed	17.61	16.40	16.15	1.5%
Artificial insemination*	3.17	3.17	2.98	6.7%
Transportation, fees & promoti	5.09	5.02	5.09	-1.4%
Machinery, equipment repairs	2.87	2.95	2.98	-0.8%
Fuel & oil	1.49	1.64	1.66	-1.3%
Custom work	2.38	2.42	2.56	-5.6%
Fertilizer & herbicides	1.93	1.92	1.96	-1.9%
Seed & plants*	1.05	1.05	1.30	-19.7%
Other (Misc): Professionnal fee:	0.67	0.68	0.76	-9.9%
Other (Misc): Animal costs	1.97	2.01	2.08	-3.5%
Other (Misc): Crops costs	0.82	0.83	0.89	-6.3%
Land & building repairs	2.42	2.44	2.39	2.2%
Property taxes & insurance	2.01	2.05	2.20	-6.5%
Hydro & telephone	1.72	1.61	1.86	-13.7%
Hired labour	2.94	2.98	3.23	-7.6%
Purchase/sale of animals*	-3.29	-3.29	-4.23	-22.2%
Dairy Inventory Value adjust	-1.97	-1.97	-1.81	8.7%
Total Cash Costs	42.90	41.92	42.04	-0.3%
CAPITAL COSTS				
Interest paid	3.20	3.34	3.49	-4.2%
Building depreciation*	2.82	2.82	2.85	-1.0%
Machinery & equipment depr*	4.52	4.52	4.55	-0.6%
Return on equity*	3.90	3.90	4.14	-5.9%
Total Capital Costs	14.45	14.58	15.03	-3.0%
PRODUCER LABOUR				
Direct labour*	14.09	14.09	15.04	-6.3%
Return to management* ⁽¹⁾	5.25	5.25	5.34	-1.7%
Total Producer Labour	19.34	19.34	20.38	-5.1%
GOV'T REBATES & OTHERS	-0.13	-0.13	-0.05	-144.8%
RESULT OF COP FORMULA	76.55	75.71	77.41	-2.2%

* Not indexed

(1) The rate of \$44.69 per hour was used. It represents the mid-range AG3 salary in 2016.

Appendix 1

Description of indices used to update cash costs and interest component

COST COMPONENTS	2016	2017 Q3	% change 2017 Q3 / 2016
Dairy Ration	107.8	100.3	-6.9%
Transportation, fees & promotion	2.57	2.5	-1.4%
Mach, Equip Repairs	121.8	125.0	2.7%
Fuel & Oil	95.9	105.4	9.9%
Custom Work	128.4	130.6	1.7%
Fertilizer & Herbicides	126.5	125.6	-0.7%
Other (Misc)	110.1	112.3	2.0%
Land & Building Repairs	135.6	136.5	0.6%
Property Taxes & Insurance	153.8	156.9	2.0%
Hydro & Phone	145.5	135.8	-6.7%
Hired Labour	35.1	35.6	1.5%
Interest	4.7	4.9	4.3%

Dairy Ration	v79309229	Table 329-0075: IPPI, by North American Product Classification System (NAPCS); Canada; Complete cattle feed
Transportation		P5 Transportation Pooling Figures/Chiffres du pooling P5 pour le transport
Mach, Equip Repairs	v79309850	Table 329-0075: IPPI, by North American Product Classification System (NAPCS); Canada; Agricultural, lawn and garden machinery and equipment
Fuel & Oil	v79309138	Table 329-0075: IPPI, by North American Product Classification System (NAPCS); Canada; Energy and petroleum products
Custom Work	v41690973	Table 326-0020 Consumer price index, 2005 basket; Canada; All-items (2002=100)
Fertilizer & Herbicides	v79309411	Table 329-0075: IPPI, by North American Product Classification System (NAPCS); Canada; Fertilizers, pesticides and other chemical products
Other (Misc)	v79309137	Table 329-0075: IPPI, by North American Product Classification System (NAPCS); Canada; Total, Industrial product price index (IPPI)
Land & Building Repairs	v41691060	Table 326-0020 Consumer price index (CPI), 2005 basket; Canada; Homeowners' maintenance and repairs (2002=100 unless otherwise noted)
Property Taxes & Insurance	v41691058	Table 326-0020: Consumer price index (CPI), 2005 basket, Property taxes (including special charges) , monthly (2002=100 unless otherwise noted)
Electricity	v41691063	Table 326-0020: Consumer price index (CPI), 2005 basket, Electricity, monthly (2002=100 unless otherwise noted). The indice accounts for 80% in the indexation of the Hydro and Phone.
Telephone	v41691070	Table 326-0020: Consumer price index (CPI), 2005 basket, Telephone services, monthly (2002=100 unless otherwise noted). The indice accounts for 20% in the indexation of the Hydro and Phone.
Hired Labour	v1602417	Table 281-0035: Average hourly earnings for salaried employees (paid a fixed salary) (SEPH); Canada; Industrial aggregate excluding unclassified (Dollars)
Interest		The interest component is indexed using the Bank of Canada 5-year mortgage rate.

Appendix 2

Farms number and total production share

	# of farms ⁽¹⁾	National production share (litres)
		2016
Maritimes	16	5.50%
Quebec	98	36.63%
Ontario	62	34.36%
West	47	23.50%
Canada	223	100.00%

⁽¹⁾ Excluding outliers